ABSTRACT

A method for identifying a Na^+ channel blocker, including providing a cell containing a Na^+ channel blocker, demonstrating both a transient and a persistent current. The cell includes a potassium (K) channel and a Na/K AtPase (Na^+ pump). A florescent dye is disposed into the well. The florescent dye is sensitive to change in cell membrane potential in order to enable optical measurement of cell membrane potential. A Na^+ channel blocker, to be identified, is added to the well and a stimulating current is passed through the cell in an amount sufficient to generate an action potential before and after the addition of the Na^+ channel blocker. Thereafter, a change in cell membrane potential is optically measured.